

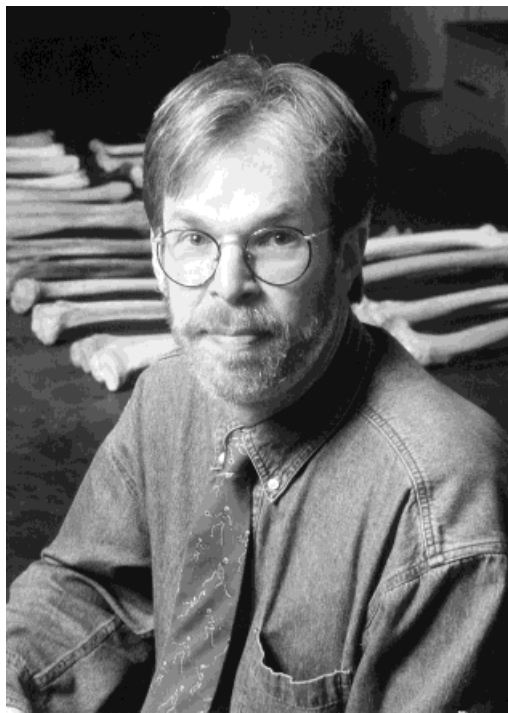
News and Views

A View on the Science: Physical Anthropology at the Millennium

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EDITOR'S NOTE The year 2000 marks the onset of the 21st century. In this transitional year, prominent physical anthropologists will provide brief reflections on our



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discipline, including what attracted them to it, and their views on the directions our discipline may pursue as we enter, in January 2001, the third millennium. *Am J Phys Anthropol* 111:1-4, 2000. © 2000 Wiley-Liss, Inc.

My first exposure to physical anthropology was during the summer of 1970. I had just graduated from high school and was employed for the summer before starting college at Kansas State University as an archeological excavator working for the Nebraska State Historical Society at a frontier military fort north of Omaha. I had always had a keen interest in archeology, and to be working on such a project was an exciting adventure for an 18-year-old from a small town in southeastern Nebraska. At some point in the middle of the field season, a fellow crewmember came upon fragments of a skull he had found while excavating a trash deposit near the remains of a barracks. The half dozen or so members of the crew rushed over to the spot where the bones were found, extremely curious about what lay buried in the ground. The project archeologist took a look at the skull, and after several minutes announced that it was from a young adult female, probably of European ancestry. I was immediately taken with the fact that the archeologist could tell all of that from a skull. From that single encounter with skeletal remains, I decided that this is what I wanted to do for a living—study bones and teeth.

Little did I realize at the time that this brief introduction to human biology would set the stage for a career in physical anthropology. Following up on my new-found interest, I was fortunate to be able to take courses with William Bass in my freshman year of college and to do field and lab internships

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with Douglas Ubelaker and T. Dale Stewart from the Smithsonian Institution and David Hurst Thomas from the American Museum of Natural History. I then did my graduate education at the University of Michigan, studying with and taking classes from Milford Wolpoff, Loring Brace, Stanley Garn, Frank Livingstone, and David Carlson. My work with these physical anthropologists prepared me for the professional career that I currently enjoy. Importantly, I also learned how to teach from these scientists—their mentoring provided me with the teaching skills for educating the hundreds of students that I have had the privilege of working with over the last 20 years. But, enough of me. In the remaining space here, I'd like to share my views on the field, especially focusing on some of the strengths and challenges that our profession faces as we progress into the new millennium.

The discipline of physical anthropology is in what I believe to be a very strong position. At no other time in the history of our profession or in the organization that represents us—the American Association of Physical Anthropologists—are we larger in numbers, have such a diverse range of interests, or enjoy such a strong visibility among our scientific peers and the larger public. At my first AAPA meeting in 1972, held in Lawrence, Kansas, a record crowd of just over 300 was in attendance. In contrast, more than 1,000 registered for our last gathering held in Columbus in 1999. The AAPA now boasts a membership of some 1,700. Although our members are drawn mostly from the United States, many also come from other countries, contribute to our Journal, and participate in various AAPA activities.

Our strength is all the more impressive given that in comparison with many other sciences, we are small in numbers. Within our academic departments, we are almost always a minority, and often are viewed as weird or otherwise peripheral to the field of anthropology by our colleagues and students. Public and scientific interest in our science is large, however. Sitting in my barbershop in Chapel Hill last week, I picked up two recent issues of *Time* magazine. Both

issues prominently featured the work of physical anthropologists, including a cover story on newly discovered hominids from Ethiopia (August 23, 1999) and exciting finds of potentially thousands of mummies from Egypt (September 6, 1999). Over the last several days, I've been interviewed by various on-line and print media about the recent report on Neandertal cannibalism that appeared in *Science* (October 1, 1999). Television features our work on a regular basis, especially in forensic anthropology and paleoanthropology. Following our annual meeting, results of scientific presentations are highlighted in *Science* and other professional outlets, providing us with important visibility, on the one hand, and indicating interest in what we do, on the other.

From my vantage point, the strength of our discipline lies not in our numbers, but rather, in our distinctive approach to the study of biology. Physical anthropologists share a commitment to Darwinian evolutionary theory in explaining and understanding the biological world around us. This commitment confers a powerful sense of mission and direction to what we do as a discipline (and see Cartmill, 1994). We may disagree at times on the mechanisms involved in explaining evolutionary change—the modern human origins debate is a case in point—but the commonality of paradigm helps to unify us in a manner that is the envy of our non-bioanthropological colleagues. Because our central paradigm is Darwinian evolution, our focus is not on the norm but on variability. One can pick up any issue of the *American Journal of Physical Anthropology* or attend any one of the multitude of papers or posters at the annual meetings and be impressed by the wide range of interests in primate and human variation, whether that variability is related to cusp size in Eocene notharctines, orbital morphology in Miocene hominoids, dietary adaptation in ancient hominids, DNA in nonhuman primates, long bone structural morphology in prehistoric Amerindians, or osteoporosis in living Euro-Americans. As was so well articulated by Kenneth Weiss (1998) in a recent article, evolution selects from available variation, and it is only through the documentation

and interpretation of that variation are we able to truly understand the biological past and present.

Another important strength of our science is its wide temporal and spatial perspective—we look at populations from all times and all places. When I talk to colleagues in the medical sciences I am dumbfounded by their lack of perspective on the past. What is accepted wisdom for physical anthropologists is novelty to these colleagues. It is simply not possible to understand the present condition of our species and others in the order Primates without a full appreciation for past biological variation and the ecological, cultural (in the case of humans), and social context for the appearance of that variation. Moreover, our science understands the importance of culture in influencing the various behaviors that impact our biological world, ranging from structural adaptation of long bones to infectious disease to craniofacial morphology, among many other areas.

As with any other maturing discipline, physical anthropology is developing new identities. At our annual meetings, we now collaborate with *seven* other organizations representing many of the diverse interests of our members—Human Biology Association (formerly Human Biology Council), Paleopathology Association, Dental Anthropology Association, American Association of Anthropological Genetics, American Dermatoglyphics Association, Primate Biology and Behavior Interest Group (formerly Primate Interest Group; the acronym was too much to live with), and every other year, the Paleoanthropology Society. The meeting of all of these groups under one roof has become logistically complex. However, the fact that these groups wish to co-meet with the AAPA expresses the strong common interests of the attendees from all of the organizations. Moreover, we have a dedicated membership who takes on most of the hard work that goes into meeting organization. Our multifaceted identity is reflected in the fact that in addition to having a presence in anthropology departments, many of us are housed in medical schools (whose physical anthropologists teach anatomy courses), dental schools, museums, American military

research centers, and elsewhere. Clearly, the wide-ranging expertise that we offer has many applications.

Our holistic approach to biology has important practical applications. For example, members of our discipline are active in addressing public health problems, such as nutritional deprivation and its impact on growth, development, and learning (Huss-Ashmore and Johnston, 1985). Because of the interest in variation, a balance is provided to the normative approaches taken by economists, sociologists, and others whose perspective tends to be stereotypical. The emphasis on variation engendered by anthropologists and applied to problems of practical importance has had a positive impact on understanding growth of children, for example, in underdeveloped contexts, both in the United States and elsewhere, and how living conditions can be improved for millions around the world.

Physical anthropologists who study human remains from archaeological contexts have offered their expertise in explaining to the public the value of studying ancient skeletons. In this regard, the AAPA has contributed by explaining in different settings—including the United States Congress and the federal courts—what the downside is for not studying ancient remains. Simply, the information that we learn from the past is important for interpreting the present human condition (Larsen, 2000). In a similar vein, it is the group of physical anthropologists who study nonhuman primates that has been especially forceful about conservation and preservation of endangered species.

The theoretical core of our discipline, evolution, is considered controversial by a substantial portion of the American public; most of the opposition derives from a range of religious views (Scott, 1997). Anti-evolution is small but growing, and this growth is deleterious in important ways. “Evolution bashers” are well organized and have recognized that their biggest influence is in government, particularly at the local and state levels. The recent decision by the Kansas State Board of Education to eliminate key aspects of evolution from the science curriculum is an example. Primate and human

evolution comes under the purview of physical anthropology, and our field is in a special position to articulate the form and substance of this arena of evolution (including students in our classrooms who are the future high school science teachers). Physical anthropologists continue to play a key role in teaching about evolution. Indeed, physical anthropologists are oftentimes the primary source of instruction in evolution on many campuses (see Scott, 1997).

Since the founding of our journal in 1918 and the AAPA in 1930, both by Aleš Hrdlička, our field has experienced impressive growth and has played a dominant role in elucidating key areas relating to the biology of humankind and primates generally. I look forward to continued growth, exciting breakthroughs in our understanding of the past

and present, and new ways of exploring the wonderful biological world that we inhabit.

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